



# 7/1 10/30/02  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of GABZDYL

S/N: 09/844,186

Filed: April 27, 2001

For: IMPROVEMENTS IN THERMAL WELDING

Atty. Dkt.: M00B107

Group: 1725

Examiner: Zidia T. Pittman

Assistant Commissioner for Patents

Washington, DC 20231

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence and every writing referred to herein as being enclosed is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:  
Assistant Commissioner for Patents, Washington, D.C. 20231, on October 17, 2002.

(Date)

Betty Lee

Printed name of person signing this certificate

*Betty Lee*

Signature of person mailing

**AMENDMENT AND RESPONSE TO OFFICE ACTION**

In response to the Office Action mailed May 17, 2002, please enter the following amendments.

**IN THE SPECIFICATION**

Page 2, lines 10-23

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A1  
In a friction stir welding process a tool is used which comprises a shank, a body (sometimes with cooling fins), a shoulder and a pin. There are a wide variety of different tool designs. The tool is usually made from tool steel and may have a specialised coating. The tool is inserted into what is, in essence, a milling machine. The pin is lowered onto the two plates to be joined. The rotation of the pin heats the metal until it softens. At this point the pin is pushed downwards so that the shoulder comes into contact with the metal plates. The shoulder has a concave profile so that the tool locates the plasticised metal displaced by the pin. The shoulder now begins to heat a larger volume of the metal. Eventually enough metal is soft enough to allow the pin to be